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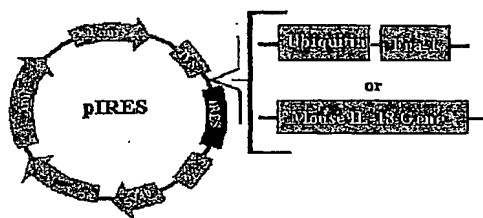
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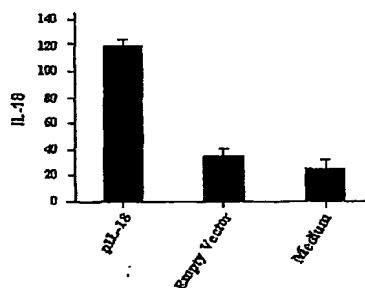
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(54) Title: DNA VACCINES AGAINST TUMOR GROWTH AND METHODS OF USE THEREOF

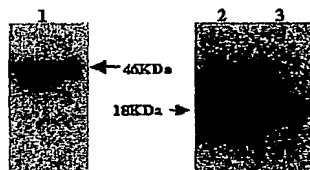
A



C



B



D



(57) Abstract: A DNA vaccine suitable for eliciting an immune response against cancer cells comprises a polynucleotide construct operably encoding an a Fra-1 protein, such as a polyubiquitinated human Fra-1 protein, and IL-18, such as human IL-18, in a pharmaceutically acceptable carrier. In a preferred embodiment, the polynucleotide construct is operably incorporated in an attenuated bacterial vector, such as an attenuated Salmonella typhimurium, particularly a doubly attenuated aroA- dam- S. typhimurium. Transformed host cells, methods of inhibiting tumor growth, of vaccinating a patient against cancer, and of delivering genetic material to a mammalian cell in vivo are also described.



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